

SYNONYMY AND DISTRIBUTION OF THE FROG
GASTROTHERCA LONGIPES (BOULENGER)

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ALTHOUGH *Gastrotheca longipes* (Boulenger) is one of the more spectacular species of this genus, remarkably few data have accumulated concerning it since it was originally described.

While working in the British Museum during the summer of 1959, I had occasion to examine and take notes on the two cotypes. In 1961 I had the privilege of visiting the Instituto Oswaldo Cruz in the company of Dr. Bertha Lutz and had the opportunity of seeing the type of *Gastrotheca viridis* Lutz and Lutz in that institution. Since these two nominal forms are surely conspecific, I present the following synonymy, redescription and notes on the species.

Gastrotheca longipes (Boulenger)

1882 *Nototrema longipes* Boulenger, Cat. Bat. Saliencia in the British Museum, p. 418, pl. 27 (type locality: Canelos and Sarayacu, Ecuador); Gadow, 1901, Amphibia and Reptiles, p. 188; Nieden, 1923, Das Tierreich (Anura 1), p. 321.

1939 *Gastrotheca viridis* Lutz and Lutz, Ann. Acad. Bras. Sci., Vol. 11, no. 1, p. 81 (type locality: Serra da Bocaina, a region bordering on the states of São Paulo and Rio de Janeiro, Brazil).

Diagnosis. A rather large *Gastrotheca* with the cranial derm free from the skull, without triangular appendages on the upper eyelids, and with very small dermal appendages on the heels. It is a pale frog (green in life, pale yellow to white in preservative) generally with dark markings in the form of thin postocular stripes, a few scattered round spots on the top of head and dorsum, a transverse bar above the vent, and markings on the lateral sides of the feet and the one or two outer toes.

Description of male cotype. BMNH. 80.12.5.238 [1947.2.31.5]; Sarayacu, Ecuador; collected by Mr. Buckley. Vomerine teeth in two short, transverse series between the small, rounded choanae; tongue two-thirds as wide as mouth opening, broadly rounded, its posterior border slightly free and shallowly notched; snout short, rounded when viewed from above, truncate and slightly sloping



Fig. 1. Dorsal view of *Gastrotheca longipes*, Escuela Politecnica Nacional 2748, adult male from Río Rutuno, Pastaza Prov., Ecuador.

in profile, the upper jaw not extending appreciably beyond lower; nostrils more lateral than superior, not projecting, their distance from end of snout about one-half that from eye, separated from each other by an interval equal to their distance from eye. Canthus rostralis sharply defined, somewhat curved; loreal region concave and nearly vertical, the upper lip not flaring out appreciably below it. Eye medium, not particularly prominent, its diameter twice its distance from nostril; interorbital distance broad, half again as wide as upper eyelid, which is about equal to the distance between nostrils. No superciliary appendage. Tympanum distinct, higher than wide, its greatest diameter about one-half the diameter of eye, separated from eye by about its shortest diameter. Fingers with a trace of web at base, first and second about equal, fourth slightly longer than either, reaching to base of disk of third, which slightly more than covers the tympanic area; no projecting rudiment of a pollex; a small but definite ulnar ridge. Toes slightly more than one-half webbed, the web on fourth toe reaching the base of the penultimate phalanx, fifth longer than third, disk of fourth covering about two-thirds the tympanic area; a distinct oval inner and a very indistinct rounded outer metatarsal tubercle; tarsal ridge present; very small dermal appendage on heel. Body moderately elongate, in postaxillary region a little narrower than greatest width of head; when hind leg is adpressed, heel reaches well beyond tip of snout; when limbs are laid along the side, knee and elbow considerably overlap; when hind legs are bent at right angles to body, heels overlap considerably. No patagium. Skin of upper parts smooth; above the region of the urostyle the skin is fused with the flesh, forming the incipient thecum of the male; there is a definite glandular fold lying above the vent, arranged in the form of a shallow, inverted V; a rather narrow glandular ridge passes above the tympanum; skin of throat and chest smooth, that of belly and lower femur uniformly and finely granular; a very faint trace of a skinfold across the chest; no inguinal gland; vocal sac not apparent. Skin of head not coossified with skull, roof of skull exostosed.

Dimensions. Head and body, 55.7; head length, 18.3; head width, 21.4; femur, 31.8; tibia, 35.1; foot, 45.7; hand 18.8 mm.

Color in alcohol. A very pale frog marked as follows: a little brown stripe between nostrils, a broader one between the eyes, supratympanic fold margined with brown, and five brown spots

on back as follows: a single median one just back of the head, a pair just anterior to the sacrum and another smaller pair just posterior to the sacrum. The ulnar and tarsal ridges and glandular fold above the vent are margined in creamy white. There is a creamy white margin to the upper lip, a tiny creamy white spot below each eye, and another slightly larger one posterior to the angle of the jaw on each side. The ventral surfaces are immaculate.

Variation. The discussion of variation below is based on the following specimens examined:

- BMNH 80.12.5.238 [1947.2.31.5]. Adult male. Ecuador, Sarayacu (co-type of *G. longipes*).
- BMNH 80.12.5.163 [1947.2.31.4]. Adult female. Ecuador, Canelos (co-type of *G. longipes*).
- Inst. Oswaldo Cruz. Adult female. Brazil, Serra da Bocaina, on the border between the states of São Paulo and Rio de Janeiro (type of *G. viridis*).
- Esc. Polit. Nac. 2745. Adult female. Ecuador, Pastaza Prov., Chicerota, upper Amazon Basin not far from the point where the Rio Bobonaza enters the Rio Pastaza. Alt. 250-270 m.
- Esc. Polit. Nac. 2746. Immature. Same data as E.P.N. 2745.
- Esc. Polit. Nac. 2748. Adult male. Ecuador, Pastaza Prov., Rio Rutuno (circa 77° 15' W., 1° 55' S.). Alt. 340-350 m.
- Esc. Polit. Nac. 2749. Adult female. Same data as E.P.N. 2748.
- J. A. Peters 3868. Immature. Same data as E.P.N. 2745.

The pattern of this species may be seen in the adult male (Esc. Polit. Nac. 2748) illustrated in Fig. 1. In this specimen the top of each eyelid is marbled in brown, and a brown interocular dark bar extends from the dark spot on top of one eyelid to the dark spot on top of the other. There is a rounded dark spot about the size of the tympanum or a little larger on the back just above the occipital region. A narrow dark brown stripe extends from the posterior corner of the eye above the tympanum to terminate at a point slightly behind and above the axilla. There is a pair of brown spots about the size of the tympanum on the back slightly anterior to the sacrum and another pair of much smaller brown spots between these and the region of the vent. There is a quite pronounced horizontal dark bar above the vent, a few brown specks on each knee, and a brown line extending across each heel, along the lateral side of the tarsus, and on to the dorsal surface of the two outermost toes. Otherwise the specimen is white in preservative.

The male cotype of *longipes* differs in pattern from the male discussed above in having a little brown stripe between the nostrils and in that the line above the vent and along the outer side of the tarsi is not conspicuous.

In the type of *viridis* the interocular bar is incomplete with only a brown spot on the top of each eye. There is a pair of rounded dark spots on the anterior portion of the back; posteriorly there are five or six tiny, more or less paired spots posterior to the sacral hump. Furthermore there are three fairly distinct small brown spots on the dorsal surface of each crus.

Some of the other specimens have patterns that differ from this as follows: In the two fresh adult females in the Esc. Polit. Nac., the larger of the specimens has a pattern essentially as described for the male above except that the dorsal spots are a little more reduced, and the two posterior-most dorsal spots lie in the corners of the opening of the dorsal pouch. In addition a few faint flecks of brown occur along the upper surface of the shanks. The other female, also mature, has the pigment restricted to the line above the vent and the line along the outer margin of the heel, the lateral surface of the tarsus, and with faint markings on the top of the two outermost toes; otherwise she is white.

The two young specimens at hand, Esc. Polit. Nac. 2746 and JAP 3868, have quite distinct interocular bars running from the margin of one upper eyelid across the dorsal surface of the eyelid and top of the head to the margin of the other eyelid, a single anterior median spot on the back, two larger spots just above the sacrum, and the outer margin and dorsal surface of the two lateral toes are covered in brown; otherwise they are immaculate.

There seems to be some sexual differences in size, the female attaining a larger size than the male. The following table gives the head-body, thigh, and crus length in millimeters for the male cotype of *longipes* and the three adult specimens in the Escuela Politecnica Nacional.

| | Head-body | Thigh | Crus |
|-------------------------------|-----------|-------|------|
| BMNH 80.12.5.238, male | 55.7 | 31.8 | 35.1 |
| Esc. Polit. Nac. 2748, male | 72.1 | 35.0 | 40.5 |
| Esc. Polit. Nac. 2745, female | 80.8 | 42.5 | 47.8 |
| Esc. Polit. Nac. 2749, female | 88.4 | 46.0 | 52.3 |

Acknowledgments. To the following I am deeply indebted: to Miss Alice G. C. Grandison for the privilege of examining the cotypes of *G. longipes* in the British Museum; to Dr. Bertha Lutz for the privilege of examining the type of *G. viridis* in the Instituto Oswaldo Cruz; to Dr. Gustavo Orces V. for the loan of the specimens in the Escuela Politecnica Nacional; to Dr. James A. Peters for the loan of the specimen in his personal collection; to Mr. Paul Laessle for the photograph for the figure included herein; and to the National Science Foundation for grants in support of my studies on South American tree frogs (G-13325; GB-1339).

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